October 16–22 1987 Vol 6 No 41 60p

POPULAR Computing WEEKLY

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Choosing a monitor, p.16

NEWS DESK

Amiga A500 price cut

Atari profits up

PROGRAMMING

More machine code graphics

Eight pages of listings

10 HIT GAMES

OVER 20 EXCITING EVENTS

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POPULAR Computing WEEKLY

October 16–22

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New price for A500

In a move predicted by *Popular* over the last few weeks, Commodore has announced a new price for the Amiga A500. As of October 15th, the A500 will retail at £499.99 inclusive of VAT, and with Deluxe Paint from Electronic Arts bundled free.

Tom Hart, Commodore's national Sales Manager for Consumer Products, said: "We believe that £499.99 inclusive of VAT offers a significant incentive to the consumer during the Christmas period and the months ahead.

This is the only price change both for the remainder of 1987 and for the forseeable future."

Even at £499.99, there still seems to be some scope for price reductions, especially considering Deluxe Paint is worth at least £50.

ST boosts Atari profits

ATARI'S half-year profits are up 132 per cent on last year's corresponding figures, at $28,795,000 (£17,531,202).

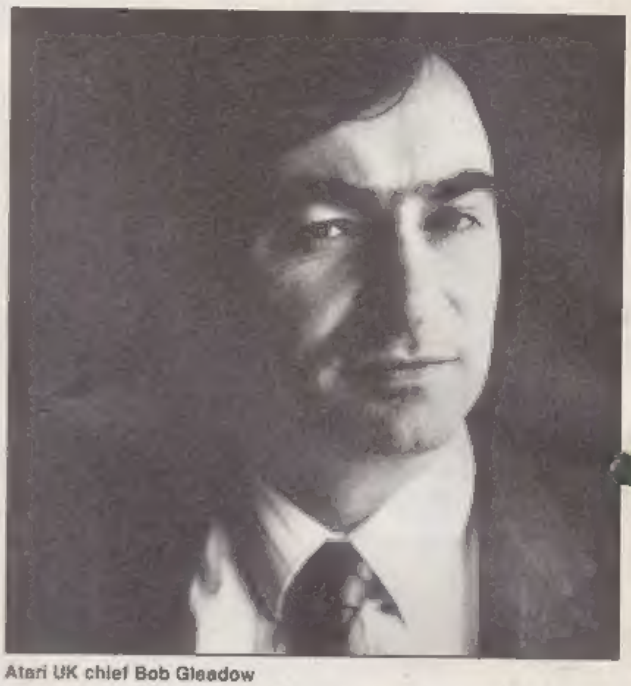
This figure is for net income over the first half of 1987 – up to July 4, and compares with net income over the same period last year of $12,400,000 (£7,549,467 at today's rates).

"Last year we were trading at a loss – this year we're trading on the back of a very healthy 'cash in the bank situation'," commented an Atari spokesman last week.

The turnaround is largely thanks to the phenomenal success of the ST range, and the spokesman added that Atari will be adding upgrades and more power to these machines in future, rather than further reducing their price.

"We will be looking to acquire a semi-conductor manufacturing facility, to move the company into the 1990s, exploiting the power of parallel processing, and so on," he continued.

Meanwhile the company's problems in meeting demand for the STs has reached global proportions. This week's trade press carried reports that Atari chief financial officer Greg Pratt was admitting shortages in every Atari subsidiary.



Atari UK chief Bob Gleadow

"I've got no real idea of exactly how many we could've supplied. There's been a substantial global shortfall. On today's profit figures, I can only say, "Boy, I wish someone told me demand was going to be this high back in May", Pratt was reported as saying.

New joysticks from Konix soon

ONE criticism that has been levelled at the new Sega and Nintendo games consoles is that the tiny joystick 'cards' supplied with them aren't really suitable for high-speed games playing.

However, Joystick manufacturer Konix is about to launch new versions of its successful *Speed King* for both games machines, and also for Apple and IBM PCs.

The new joysticks are based on the original *Speed King* design, with variations for the different machines also available.

The IBM and Apple versions have been enhanced so that the sticks can be used for graphics design as well as playing games.

Konix have already received orders for 150,000 Nintendo sticks from America and also expect the Sega version to do well.

The original *Speed King* has been dropped in price to £11.95 and now comes bundled with a copy of *Gremlin Graphics' Thing Bounces Back* game.

Word up

TASMAN Software are releasing *Tasword Plus Three* this week.

The program is an upgraded version of the original *Tasword* wordprocessor for the Spectrum, and includes a number of new features, such as mail-merge, erase and rename file, and background printing, to take advantage of the Plus Three's new disc facilities.

And, at the same time, Seven Stars Publishing are releasing *Qualitas Plus*. This is an enhanced version of the *Qualitas* program designed to be used in conjunction with *Tasword*, *The Writer* or *The Last Word*. It allows you to print in condensed and enlarged modes, and also includes five new fonts for NLQ printing. A tape with a further ten decorative fonts is also available.

Tasword Plus Three is priced at £19.95, and *Qualitas Plus* at £10.95 (£5.95 for the decorative fonts tape).

The prize guy

THE PCW Show is increasingly becoming the chosen place for software houses to run long and complicated competitions. Two years ago, Acorn ran a full-blown *Elite* championship, and this year, CDS ran a *Brian Clough's Football Fortunes* competition.

The game marked the culmination of a national search for the best player (run in a variety of regional local papers) in Britain.

Philip O'Neill, of Airdrie near Glasgow, scraped through after a close and often hard fought final.

For all his work, Philip won a trophy and a selection of CDS software, both of which were presented by sometime ex-boxer, sometime pop singer (which explains the uncanny resemblance to ex Undertones lead singer, Feargal Sharkey), and sometime motor racer, Barry McGuigan.

Quite why Barry McGuigan handed over the prizes is unclear, but he seems quite happy anyway.

Colour revolution

EIDERSOFT Ltd will shortly be releasing a product that could revolutionise the way entertainment software will look on the Atari ST. *Quantum Paintbox*, written by David Jones, is described as a graphics utility, and is capable of displaying 4096 colours simultaneously.

The technique used is one of pallette switching whereby the screen is divided into eight sections, each of which has its own 512 colour pallette.

Because of the processing power required, this technique only lends itself to the production of still pictures, such as title pages.

There are two other modes of operation in *Quantum Paint*, one of which displays 512 colours and can be used for still or minimally animated pictures. The other is of more importance to software producers in that it uses 128 colours and allows full animation as well.

For home users there will be special routines included on the program disc to enable the pictures produced with *Quantum Paint* to be incorporated in their own programs.

Quantum Paint is expected to retail for £19.95 (inc VAT), and Eidersoft can be contacted on (0708) 856468.

SOFTWARE HOTLINES

The prettiest screenshot of the week award goes to **Melbourne House** for *Road Wars*. Not surprisingly, this is an Amiga screenshot so don't expect to see anything like it on the Spectrum.

This is a coin-op conversion in which you control a 'Battlesphere' hurtling along a never-ending roadway in outer space. Trundling alongside is your opponent in a second sphere, and the point of the game is for the two of you to try and bump each other off the roadway and into oblivion, using a variety of hi-tech weapons that you can pick up along the way.

Road Wars is one of the first releases from the new, improved Melbourne House and it certainly looks like an improvement over some of their lacklustre pre-PCW efforts.

The annual burst of sports games is about to make its regular Christmas appearance. **Tynesoft** has got *Winter Olympiad '88* lined up for release in about a month. The six events are ski-jumping, bob-sled, slalom, downhill racing, biathlon and speed skating.

Tynesoft was going to call it Winter Olympics, but it seems that **Epyx** had a similar idea and managed to copyright the word 'Olympics' before anybody else could use it.

Ariolasoft is just about to unleash *The Werewolves of London*, the first game from new software company Viz Designs. It's a gentle little game in which, labouring under a curse, you turn into a werewolf every night.

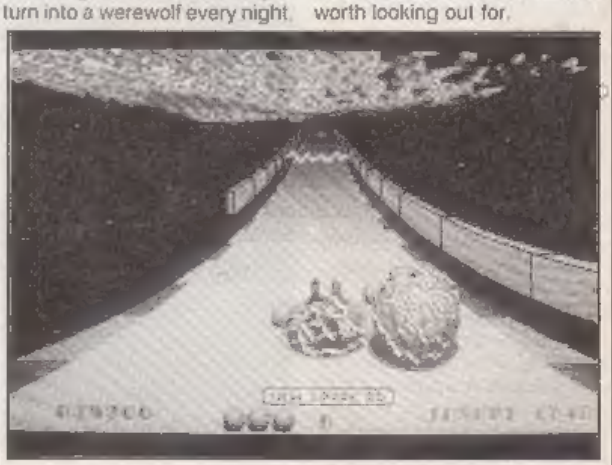
The only way to get rid of the curse is to find the antidote ingredients that are hidden throughout the game's 185 screens, and to eat all your relatives as well. As you may have guessed, it's the demolishing of the family that is the real fun in the game. Viz' next release is going to be *Valley of The Ants* (or something like that), with giant ants, mutant rats and the like.

Virgin Games is going in for something a bit more intellectual after *How To Be A Complete Naughty Person*. They're producing a game based on everybody's favourite wargame, *Diplomacy*.

If you've never played *Diplomacy* then you ought to give it a try. Although the aim of the game is to conquer Europe it's not one of those dull strategic jobs. The best part of the game is that it gets half a dozen people together and gives them all the chance to stab each other in the back. It has been known to ruin life-long friendships.

The game is being programmed by American wargaming company Avalon Hill, and although the PC version is almost finished the C64 one won't be ready until early next year, which is all the excuse you need to go and buy the boardgame for Christmas.

Spectrum adventure fans aren't all that well catered for these days, since all the best stuff is being produced for16-bit machines, but **8th Day Software** is currently working on a series of *Detective Tales* adventures for 128K Spectrums. **8th Day** is one of the few companies still turning out decent adventures for less than £15 so *Detective Tales* could be well worth looking out for.



DIARY DATES

OCTOBER

15–17 October
Desktop Publishing Show
Business Design Centre, London
Details: Demonstrations of latest hardware and peripherals, plus seminars and user clinics
Organiser: Database Exhibitions, 061-456 8383

23–25 October
Amstrad Computer Show
G-Mex, Manchester
Details: Latest hardware and software right across the Amstrad range
Organiser: Database Exhibitions, 061-456 8383

NOVEMBER

13–15 November
Electron and BBC Micro User Show
New Horticultural Hall, London
Details: Latest hardware and software across the Acorn range
Organiser: Database Exhibitions, 061-456 8383

Prices, dates and venues of shows can vary, and you are therefore strongly advised to check with the show organiser before attending. We cannot accept responsibility for any alterations to show arrangements.

Barry backs Back Pack

A SPECIAL appearance by Barry McGuigan at the Back Pack stand at the PCW show helped to raise over £1,000 for the NSPCC children's charity.

The *Back Pack* games compilation is now available for the Spectrum and C64 and the Amstrad version should be released soon. The final contents of the different versions are as follows:

Spectrum – *Xeno, Night Gunner, Marsport, Metabolis, Monty On The Run, Starion, Mailstrom, Starstrike, Lunar Jetman, Bounty Bob Strikes Back.*

C64 – *Xeno, Barry McGuigan's Boxing, Nomad, Prodigy, Bounces, Skyfox, Electraglide, Starion, Bounty Bob Strikes Back, Monty On The Run.*

Amstrad – *Xeno, Grumpy Gumphrey Super Sleuth, Barry McGuigan's Boxing, Marsport, Monty On The Run, Starion, Starstrike, Knightshade, Night Gunner, Thing On A String.*

Games for a laugh

THE GUILD OF THIEVES, the adventure game by Magnetic Scrolls, has just been awarded Game of the Year at the 1987 British Micro Computing Awards.

The Guild of Thieves is the second Magnetic Scrolls adventure and follows in the footsteps of its successful predecessor *The Pawn*, which was voted Adventure of the Year by five British magazines and also received awards from abroad.

Anita Sinclair, Managing Director of Magnetic Scrolls said she was delighted to win the award and hoped that the success story would continue with the release of their third game *Jinxter*.

Jinxter follows in the mould of The Guild as it is also an enthralling adventure game.

Noted for its descriptions and detailed graphics, *Jinxter* is set for November release.

Award for Magnetic Scrolls

Swifte-LISP

SAHARA has announced *Swifte-LISP*, another programming language which can run under the MIRAGE operating system.

Swifte-LISP is supplied as an interpreter and debugger, and is written in MC68000 assembly language. It takes up 41k, and can be used with LISP dialects such as Scheme, Standard LISP and UCI/Stanford LISP. It costs £59.

Dark Castle for Mirrorsoft

MIRRORSOFT this week announced the signing of a new licence – *Dark Castle*, a 'huge' adventure signed from the American company Three-Sixty Pacific, Inc.

The graphic adventure features 14 danger zones, which are guarded by flying monkeys, dragons, and plenty else besides.

Dark Castle will be available at the end of the month on the PC, Atari ST and Macintosh, with Spectrum and C64 versions to follow in January 1988 "at the earliest", according to a Mirrorsoft spokesperson. Prices have yet to be confirmed.

On the shelf

A PLANNED package containing *pro midi*, *pro sound* and a dumb MIDI keyboard package from Eidersoft has been shelved. A spokesman for the company explained that the move was a result of Casio and Yamaha's intelligent MIDI keyboards dropping into the £100–200 price bracket, making the proposed package uneconomical at around £100.

pro midi, along with the other impending titles in the series *pro drum* and *pro light*, will still be sold separately for £19.95. All three programs have been delayed but are due for release in three weeks' time.

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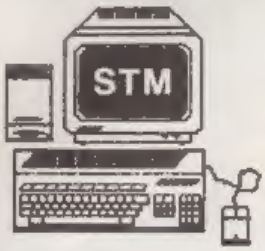

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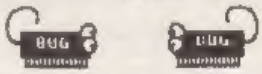

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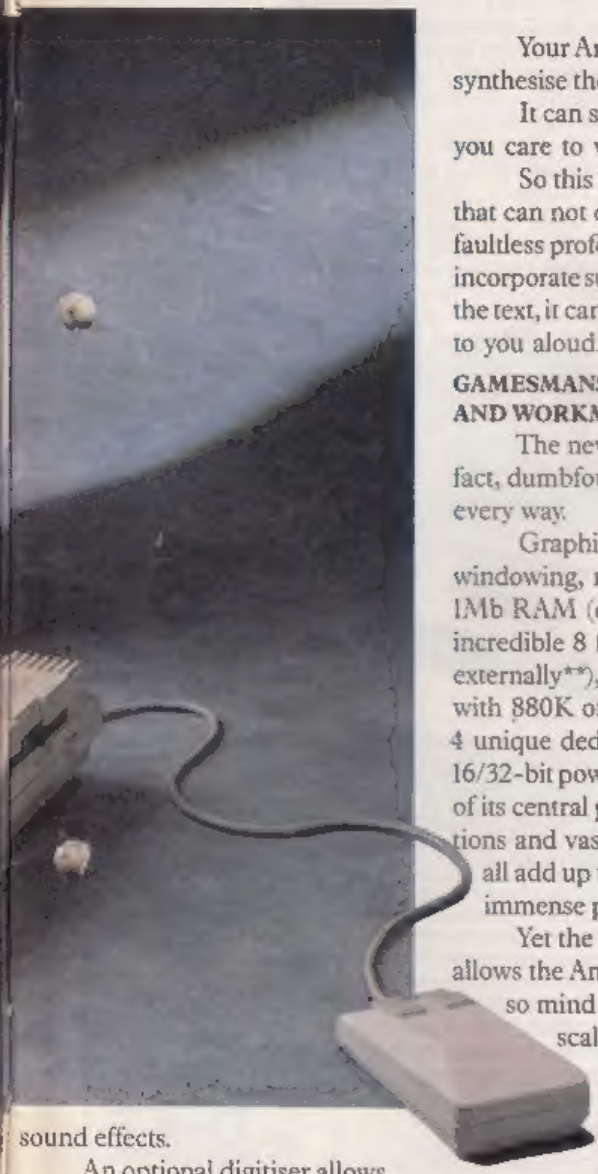

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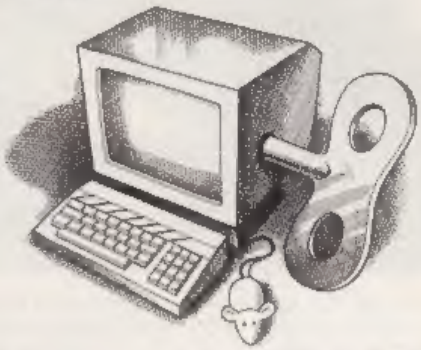

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**Popular Computing Weekly*, 22-28 May 1987. †*Personal Computer World*, February 1987. ***Subject to availability.*

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Sinclair admits

I am grateful to Dave Clare for correcting my error concerning the Acorn ARM Chip which was caused by too hasty reading of the specifications. Actually for once, I am quite delighted to be proved wrong as I was initially most impressed with the ARM and was then disappointed when I thought it would be slow in a multiply routine. Now that I know the true figures I am confident that Acorn have produced a truly remarkable design.

Clive Sinclair
London W1

Software defence

Having enjoyed the lively contents of your letters page for some months, I thought it was about time to make my contribution. Not wishing to start up a major argument I decided to confine myself to giving my opinion of the points raised by D Wright of Fareham (*Letters* Vol 6 No 39).

Starting with his (her) first point on the cost of software and its comparison with the record industry, Mr (Mrs, Ms?) Wright seems to have overlooked the fact that there is one major difference. The money spent on software is only 30 per cent of the total that is spent on singles alone. As the software market is much smaller, the units sold will be much smaller so companies will sell them for a higher price. The same will apply to royalties, as the software writer has to live on returns from smaller sales and thus needs a higher percentage. Who is the richer of the two, Andrew Braybrook or Andrew Ridgley?

Secondly I can't accept that the time taken to produce a song is the same as that taken to produce a game 'singular in both cases). Most artists release an album of around ten tracks every twelve to twenty months. Most software writers will take twelve to eighteen months to produce one game. Budget releases are a different case as they sell in greater quantities because of their lower price. However, that same low price means that a lot less time can be spent on development of the game, which in turn leads to lower quality.

Moving onto Mr Wright's suggestion of an independent software reviewing body, we already have one. It is called the computer press and the purchasing public. If you go into any computer shop today you will find a copy of *The Great Space Race*. Not because it is good, but because they can't get rid of it. As soon as it hit the streets the press and public denounced it to the rubbish it was. The only people who bought it were those who did not try before they bought.

That brings me to the next point. If Mr Wright is no longer trying before he buys he has only himself to blame. I never ever buy a program until I have tried it at my local computer shop. If they won't let you try, say goodbye and go elsewhere. If there are no other shops then buy by mail order and if the game is not fit for the purpose it was sold for then send it back.

Arriving at last at his final point about software piracy. I think that the main reason for any form of protection is to stop the casual copier. There will always be those who don't have access to a multiface and who can't hack a game and it is to stop those people that the companies use protection.

Having said that I would like to finish by saying that I think the mooted drop in the cost of full price software is long overdue. The difference between 8-bit software and 16-bit is also (despite your numerous defences) far too wide. Archimedes owners can now buy an amazing piece of 32-bit software named *Zarch* for only £20.00. With a user base of three people it is selling for £4.00 less than most 16-bit software while the industry pleads that the newer computers cost a lot more to develop software for. To finally drive the stake home I would like to recommend the company I buy all my ST software from (No, I don't work for them). They are Plan Away, advertised in *PCW* quite often and have never failed to provide polite and efficient service while managing to sell games such as *The Fawn*, *Silent Service* and *Space Quest* (RRP £24.95) for £17.50.

D Marchant
London N20

PS I realise the scissors will have to come out for this one and would prefer that the last paragraph be kept as is, with editing done on earlier parts. Ta Muchly Dan "Dark Star" Marchant.

Scissors? What scissors?

Blow your own trumpet

Your correspondent, Keith Kimber, says in his piece "French Lessons" (Vol 6, No 37) that we in Britain must pay a "small fortune" to access the sort of socially useful data available on the French Minitel system. This is certainly not true for computer owners.

A subscription to Micronet, Prestel and Telecom Gold together costs a little over 18 pence a day - hardly a small fortune!

Socially useful data? The Prestel database is full of valuable information. In fact there are over 300,000 pages of data, some useful, some just fun. And for the computer user there's Micronet: 35,000 pages devoted to micros. Micronet contains not only information but also interactive services (such as electronic mail and multi-user games) and downloadable software.

As for Mr Kimber's excellent idea about giving away modems, he obviously isn't aware that that's precisely what Micronet has been doing for over a year. Just pay for a year's subscription (£66) in one go and we'll supply a free modem.

If Mr Kimber would like to take advantage of our free modem offer then perhaps he could contact me at Micronet (Durrant House, 8 Herbal Hill, London EC1R) and I will be happy to send him a free brochure.

David Rosenbaum
Public Relations Manager
Micronet

Einstein discovery

I enjoy reading *PCW*, mainly for the news items, and some of the reviews can be interesting. However, I have to take exception to comments by Ian Rook in his PCW 9512 review.

Firstly I quote: "The disks are Amstrad standard 3-inch, no-one else uses these (OK, so the Tatung Einstein uses them, but no-one uses a Tatung Einstein.)" However, look at page 11, DIARY DATES, the same issue, and what do we see? On November 14th there is the "National Einstein Exhibition" - how strange - Mr. Rook presumably does not read *PCW*!

About 50,000 Einsteins have been sold in the UK, so I've heard. Some of these owners must surely use them. I do. My Einstein has a 256K silicon disk, the two normal 3in drives and the machine and operating system support a 5.25in DSDD plug-in drive. A hard disk is also available. At present I'm running on 80 column monochrome, but this will soon be updated to 80 column colour as a new card has become available. It has as standard, an RS232, parallel centronics, parallel user, and ADC ports and a sound chip.

I run *Wordstar Professional*, *Datastar* and *Reportstar*. I also have *Cracker III* and a pile of PD software. I doubt if I will be able to outgrow it, if I update, it will be to an AT clone in order to run CAD software, and that will sit in the office.

One further comment from Mr Rook: "As anyone who bought a Jupiter Ace will tell you, no machine is complete without a Basic interpreter". The Einstein has a Basic interpreter, but I've never used it. I taught myself about micros and programming on the Einstein using Forth! Forth is also supported by an excellent interest group, the FIG UK.

I think as a general comment there are many users of CP/M machines of various types and vintages, and many of these are true users. Satisfied users who have not the money nor the inclination to rush out and buy the latest "whiz box", with all its software. There are also many computer languages, and they all have their supporters. It would behove Ian Rook well not to be so sweeping and derogatory. His opinion is just that - an opinion.

Michael O'Brien
Luton

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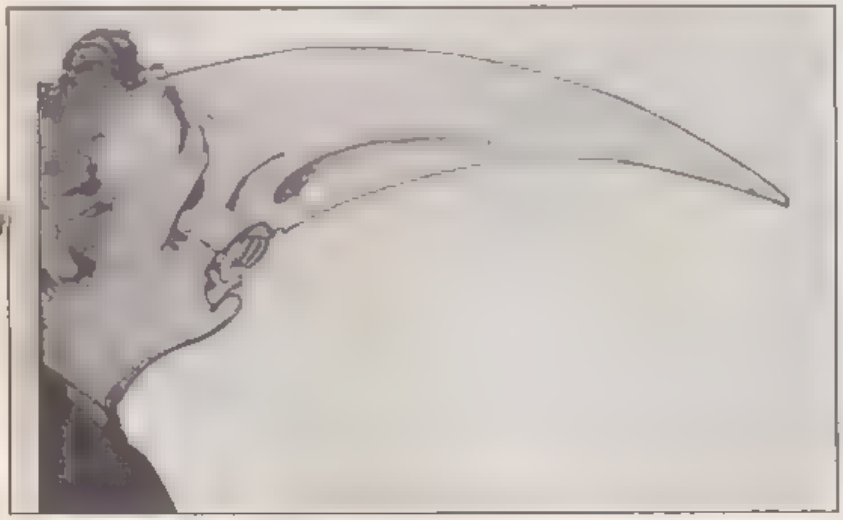
"Don't be ridiculous, Bernard, it could hardly be more simple . . ."

"*Popular Computing Weekly* is joining forces with Mosaic Publishing in a competition to celebrate the release of *Yes Prime Minister*, the licence of the long-running hit television series.



No less than fifty *Yes Prime Minister* games are on offer as prizes, and all you have to do is answer the three simple questions below, AND provide a new slogan for the game to be used as a tie-breaker.

All entries must arrive by last post on October 23rd 1987. The competition will be judged by Francis Jago, Executive Editor, and John Brissenden, Deputy Editor of *Popular Computing Weekly*. The judges' decision will be final, and all winners' names will be published in a future issue of *Popular Computing Weekly*.

The questions are as follows:

1) What was Jim Hacker's job before he became Prime Minister?

2) Name the actors who play Hacker, Sir Humphrey and Bernard.

3) What is Sir Humphrey's full official title?

Please send your entries to: Competition, Popular Computing Weekly, Focus Magazines, 3rd Floor, Greencoat House, Francis Street, London SW1P 1DG.

Please mark your envelopes or postcards 'COMPETITION'.

Don't forget to include a slogan for the game. You could win one of fifty copies of *Yes, Prime Minister*.

PEEK & POKE

with Kenn Garroch

Cheese

Graham Curtis, of Breadsall, Derby, writes:

Q I have followed with interest your Peek and Poke feature in *Popular Computing Weekly* and your recent articles in *ST Update*. I have just forsaken my CPC664 for a shiny new 1040 STF and my first project is to convert a camera shutter timing program from 664 to Atari.

The basic concept for both machines is identical: a phototransistor is connected across the centronics busy pin and ground. When light is shone through the camera shutter onto the sensor, the busy pin is pulled low giving a software timable event.

To measure shutter times down to 1/2000 of a second successfully, a very fast routine is required to monitor the port and time the shutter opening time. The Amstrad (Z80) version runs at around 65000 cycles per sec giving reasonable accuracy.

I wrote a program using fast basic and it does the right thing but rather slowly (approx 3000 cycles per sec) since it accesses the busy signal through a rather slow GEMDOS routine. More speed was needed so, armed with your *ST Update* articles, I tried my hand at a machine code direct access version. This program will not run since it produces a bus error. I misguidedly thought that entering supervisor mode avoided this problem. I am completely stumped and would appreciate your comments on getting the program to work, or suggesting an alternative method.

A Your program is correct apart from a couple of minor details. You tried to load the MFP address as MOVE.L $FFFA01,A2 which should have been LEAL $FFFA01,A2 or MOVE.L #$FFFA01,A2 ie, the address not the contents. Also, the best way to check for a bit being changed is to use the BTST instruction eg, if D0 holds 1 then BTST #0,D0 sets the zero flag to zero ie, the result is non-zero if D0 held 0 the BTSTing it sets the zero flag ie, the bit is zero. The timing speed should be in the region of 1.300000th of a sec and the program should therefore be

```
go      bsr     super
        lea.l   $FFFA01,a2
closed  move.b  (A2),d0         Read port
        btst    #0,d0           Test bit zero
        beq     closed          Still zero then wait for one
        move.l  #0,d2           Reset counter
open    move.b  (a2),d0         Read port again
        addq.l  #1,d2           Count / time
        btst    #0,d0           Test bit zero
        bne     open            Still one so wait for zero
        bsr     usuper
        rts

super   clr.l   -(sp)           Zero for to super
        move    #$20,-(sp)      Super command
        trap    #1              Doit
        addq.l  #6,sp
        move.l  d0,stksve
        rts
stksve  ds.l    1               1 long storage
usuper  move.l  stksve,-(sp)    Contents of stksve to stack
        move    #$20,-(sp)
        trap    #1              User mode
        addq.l  #6,sp
        rts
```

One track mind

Robert Timothy of Rumney, Cardiff, writes:

Q After much consideration, I have decided that you are the person to write to for some technical advice. I own an Atari 520STFM with built-in 360K disk drive. This internal drive however, can only access tracks 0–79 on a disk, whilst some software manufacturers have been using an extra two tracks, 80–81, for software protection. The result is that these programs will not work on my computer.

To solve this problem, I recently bought an external 1 Meg drive capable of accessing the tracks that internal ones can't, but have hit upon another problem. The programs themselves need to be autobooted from drive A, the internal drive. What I need to do is remove the built-in drive and fit the larger one in its place, leaving the smaller drive for use as drive B. I would be very grateful if you could tell me if it is possible to do this, and if so, how?

A Your reasoning may not be totally right about double-sided drive being able to access the extra two tracks since the stepper motor is doing the same thing for both drives ie, the 360 is single-sided, the 720 is double-sided, but both have 80 tracks. However, it may be the case that the double-sided drives have a slightly better specification. The fact that your computer cannot load the software is not a fault of the machine, it is the software houses's problem and one which should be corrected by them – especially since the software is sold to run on this particular machine.

Exchanging the drive should be possible although I can't say for sure. The internal drive is attached via a ribbon cable, a power plug, and three bolts. Disconnecting it is quite easy, and the larger drive should just drop into its place. You will be invalidating your warranty by opening the case of the ST so grit your teeth and cross your fingers before you do it. As I said, without actually trying it myself, I can't be sure that swapping the drives will work although I can't see why it shouldn't. Take a good look at the connections on both drives to see if they are the same before you remove anything, and take care when attaching the cables if you decide to go ahead.

What I would like to emphasise is the position of the software house, as I see it. They should ensure that their software works with the machines they say it will. If it doesn't then they should either replace it with a version that does work, or refund the money – check this with your Citizens Advice Bureau. In any event, they really should take more care that their product works before distributing it.

Sounds good

Graeme Dolderson of Dronfield, Sheffield, writes:

Q I am using an Amstrad monitor with my ST, with no loudspeaker in the monitor, obviously I am getting no sound. A friend of mine has taken the audio out and not only allowed me to connect this up to my hi-fi but also built a small pre-amp (with a gain of 12) into the system.

Unfortunately, this still gives only low volume sound and I would like to increase the volume further, any suggestions?

P.S. Why don't you give PCW a new photo?

A I would have thought that the hi-fi output was loud enough for anyone, however, since you want more then why not try the 15W power amp made by Maplin (VQ37S ready made at £7.95 with PSU shown on page 242 of the Maplin catalogue). Strangely enough, I have seen no adverts for a device that would do what you want, built-y especially for the ST. I should think that the market is big enough for some entrepreneur to sell one.

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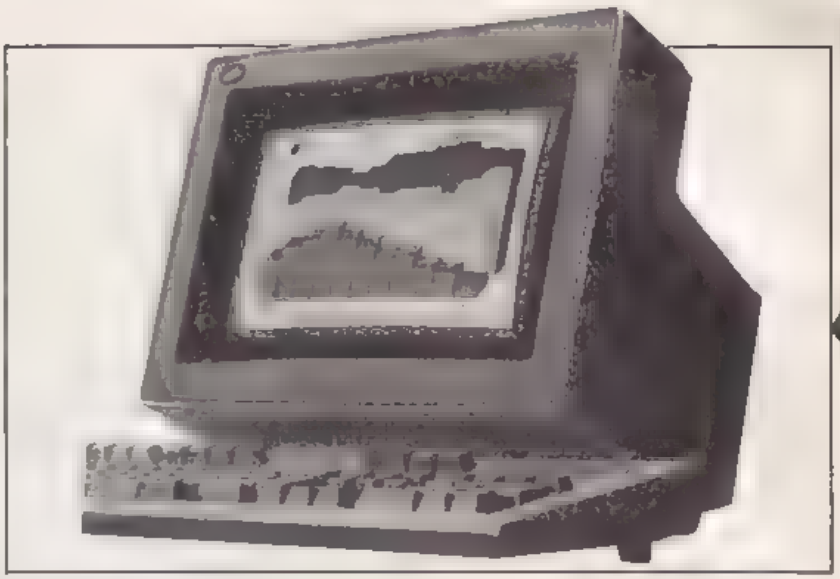
OF IT

CHOOSE ME!

Choosing a monitor is not just a case of nipping out to the shops to buy the first one you see. The choice is plentiful and the range varied depending on how much you want to spend. Keith Hoyle demystifies the art of choosing a monitor.



Choosing a computer is probably the most expensive peripheral you will purchase next to your computer. Although monitors are not cheap they can make a big difference to the quality of your display. So if an item costs so much, surely it is deserving of a more practical approach. When you are deciding on the most appropriate monitor for your system there are several questions you must ask yourself.

- Do I want, or need a colour monitor or will a monochrome model suit my needs?
- Does this monitor have the correct interface to allow me to connect it to my computer?
- Does it have a high enough resolution, so as to give me the sharpest clearest text and graphics?
- Probably the most important question, will it suit my needs, should I decide to upgrade to a better machine sometime in the future?

Before we try to answer these questions let's have a look at what is available at the moment and explain some of the more commonly used jargon associated with monitors.

Firstly, there are two distinct types of monitor. There's colour and monochrome. By monochrome we mean either green, amber or white screen.

Monochrome Monitors

Monochrome monitors usually have a higher definition (sharper picture) than colour monitors, but are best suited for text applications. Unless of course you are using your computer for (DTP) desk top publishing applications, then you will probably require an ultra high resolution colour monitor!

Monochrome monitors are normally supplied with a composite interface usually in the form of a B.N.C. connector, or the standard Phono connector. These monitors have a standard input of 1 volt peek to peek +– .5V.

The bandwithdth of a monochrome monitor is also useful in telling you how clear the display will be, the higher the bandwidth the better the picture will be. There may also be an input for sound, but check with your dealer first.

You may also require a stand for your monitor, even if it is going to sit on top of your computer. There are several types of monitor stand available from third party manufacturers, but if the makers of the monitor supply one it would probably fit better and look nicer, albeit a little more expensive. Some of the more expensive stands will probably include a tilt and swivel mechanism, this will allow you to position the monitor most suited for your own personal comfort.

Most monitors will be supplied with a lead to connect it direct to your computer, all you will have to supply is the computer itself and a plug.

"Choosing a monitor is probably the next most expensive peripheral you will purchase next to your computer . . . So if an item costs so much, surely it is deserving of a more practical approach."

Colour Monitors

Most colour monitors will be described as either high, medium, or low, they are all referring to the resolution of the monitor ie, the amount of dots available on screen to display the various images. A high resolution monitor will be capable of 640x400 pixels, medium resolution up to 400x200 pixels, and low resolution will be 200x150 pixels.

continued on page 18

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A point to note here is these figures are all only approximate. A particular monitor may have some obscure resolution like: 640×285 or 500×300 pixels resolution. Do not forget that your present computer may not drive your newly purchased monitor to its full extent, what I mean is your present computer may only output a maximum of 320×200 pixels resolution. Your monitor may be capable of displaying 640×400 pixels resolution. This will not make any difference to you but you may be paying for something you don't really need.

There is another point governing the clarity of the picture your monitor will display, that is the Dot Pitch. The dot pitch is the actual size of the dots (Pixels) that go to make up the image on your monitor, they can range in size from .31mm up to a maximum of .61mm, the smaller the dot pitch, the sharper the image will be.

Types of Input

The range of inputs associated with colour monitors are quite confusing and require a little explanation. There are basically four different kinds of RGB input: TTL RGB, HIGH IMPEDANCE RGB, LOW IMPEDANCE RGB and RGBI.

The RGB stands for red, green, blue, your three primary colours, TTL (Transistor Transistor Logic) is means of representing digital on's and off's using +5V and 0V respectively, this type of interface will only display up to eight colour's.

High Impedance RGB is linear interface and can display all colour's, using 0 to 4V.

Low Impedance RGB is also a linear interface, this type of interface is sometimes known as 1V-75ohm.

The RGBI input is also used in TTL levels so this too can only display up to eight colours.

Several of the new colour monitors also come with a composite video input as well as RGB-RGBI.

The reason for the high quality of the RGB/I interface is each of the signals from the computer to the monitor are sent down individual lines, this in turn causes very little signal loss and results in a high quality picture.

Some of the monitors now come complete with RGB linear, TTL RGBI, COMPOSITE VIDEO and STEREO SOUND. The particular monitor in question is the Philips 8833 Colour monitor. This monitor has all the possible inputs the average user would need so to upgrade in the future will not be such a headache. The reason for the high quality of the RGB/I interface is each of the signals from the computer to the monitor are sent down individual lines, this in turn causes very little signal loss and results in a high quality picture.

Most connectors for the RGB type inputs are through a DIN type plug, however some of the newer monitors are being equipped with a new interface, called the Euro connector, Scart connector, or Peri socket.

Possible Answers to the Questions

● You may think that a monochrome monitor will satisfy your needs now and in the future, but think hard before you buy, you may end up buying a colour monitor in time as you upgrade your present computer.

● If you buy a colour monitor as the one mentioned, it will almost certainly have the correct interface for your future needs. If on the other hand you buy a monochrome monitor it will probably only have a composite video input, which is fine as long as you only intend using it with text.

● Picture quality is also a sticking point, you may have bought what you thought was the perfect monitor, but when you upgraded last month found that the resolution was somewhat poor in comparison with the computer output. If it were only low resolution you may find you get headaches and eye strain, due to the poor quality images.

● The possibility of you ever upgrading may seem remote now, but in twelve months time who knows you may buy the Atari ST or the Commodore Amiga? Then you will have that potential and not be able to utilise it. So think hard, the colour monitor may be one of your better choices when you ponder in years to come.

Terms Associated with Monitors

Inputs

These specifications will vary from monitor to monitor.

RGBI TTL . . 0V/5V respectively

HIGH IMPEDANCE RGB 0 to 4V

LOW IMPEDANCE RGB 1V 75ohm

COMPOSITE VIDEO (MONOCHROME) . . . 1V – 5V pp/75ohm. Can be green, amber or white and refers to the colour of the characters.

AUDIO . . Sound input either Mono or Stereo (M or S)

Display

DOT PITCH Normally in mm, the size of the pixels on screen that make up the picture.

PIXELS (Picture Element) . the smallest unit of the computer that can be addressed, and goes to make up a graphic display.

RESOLUTION The number of pixels that can be displayed on the screen. The more the better.

BANDWIDTH (MHz) . The display frequency (Monochrome monitors) the higher this figure the better.

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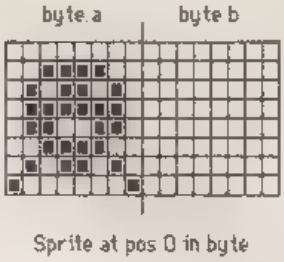
Graphic Detail

In the third part of his series on machine code graphics, Kenn Garroch unravels some of the mysteries surrounding hardware sprites.



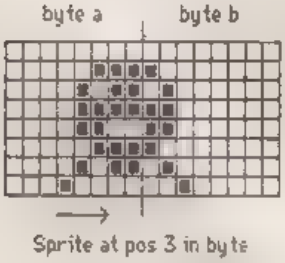


Fig 2

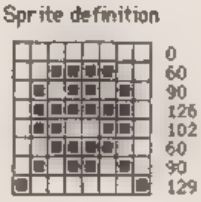


Fig 1

The most common graphics tools used in computer games today are sprites. These are predefined blocks of graphics that can be placed anywhere on the screen, usually without destroying the background when they were first introduced to home micros, they were hardware driven beasties, that's to say, they were controlled by a specialised graphics chip which left the microprocessor free to do other things. The old Atari and Commodore machines contained these special graphics chips that allowed the user to define a graphics shape in memory which could then be placed anywhere on screen simply by specifying the x/y coordinate.

There are a number of important features about hardware sprites.

- They do not disturb the background graphics.
- One of the colours is defined as transparent ie, it is possible to see the background graphics through them.
- They are placed on screen in order so that the front sprites always cover those that are behind.
- They are usually of fixed size (though not always).
- Their position is specified as an x/y coordinate – usually top left.

All of these features serve to make sprites very useful when it comes to writing games.

Many of the later machines such as the Amstrad, BBC, and Spectrum do not have hardware sprites, so the same effect must be created in software. This can be done in a number of ways, depending on the screen layout and the processor. The problem of how to place sprites on screen via a software method can be looked at in a number of ways, the simplest view is to look at the object as a number of dots, and simply plot them row by row onto the screen. This is very slow however, and a better way is to look at a sprite as a number of lines, each of which can be placed on screen as a byte. Take the simple definition of a monochrome sprite in Fig 1. Each row is 8-bits wide, and there are eight rows ie, it is the same size as the average character. Characters are placed on the screen at preset positions, sprites need to be placed at any pixel position.

Last week I discussed plotting points, and how to find the screen memory location of a byte that contains a point. The same method can be used to find the byte where the top line of the sprite starts – most screens have their lowest memory position at the top left of the screen, and also lower towards the left hand edge so, 0/0 is the top left corner.

To put the sprite onto the screen, the particular byte position is found and then the offset in that byte. The sprite can then be shifted right the number of positions specified by the x remainder ie, the offset within the byte to get the correct position. Bits of the sprite that come out of the right side of the byte are shifted into the left side of the next byte giving two consecutive bytes that can be placed on the screen in two moves – see Fig 2. Of course, this is for an ideal screen and other layouts may need slightly different methods but usually only at the 'laying on the screen' stage.

Allowing the background to show through is achieved by masking or ORing the image onto the screen. After the row has been shifted, using register of memory depending on the processor, each resultant byte is ORed onto the screen which leaves the background showing through. This is fine for mono displays but for colour, a little more sophistication is needed. A mask is required that will zero only the appropriate bits and again, how this is done depends largely on how the colour mapping is set out on screen for the computer in question. A 16 colour system may take one nibble of each byte to specify the colour of a pixel which means that for a sprite 8 pixels wide, four bytes are taken up per row.

Fig 3 shows this layout for two bytes. the best way to treat this would be to have two definitions, one shifted four places from the other as this would save a lot of processor time that would otherwise be devoted to A shifting. To place the sprite on the screen, the odd or even definition is used depending on the offset in the screen byte and then a mask is used that outlines the definition ie, where colours are to be changed on the screen are zeros transparent sections are 1s. ANDing the screen with the mask leaves the background colours intact, but blanks out the places where the sprite will go. The sprite can be ORed into the blank places, again leaving the transparent sections intact.

All that remains is to save the whole of the background that the sprite will cover, including transparent bits in a block of memory so that it can be returned later when the sprite has moved on.

As I mentioned in the first of these articles, the number of pixels that the sprite is moved should be optimised so that the frequency at which the screen is refreshed and persistence of vision are taken into account. If the resolution of the screen is such that moving the sprite a nibble or byte at a time will be virtually unnoticeable then the amount of shifting of bits is reduced considerably and the routine can made run that much faster.

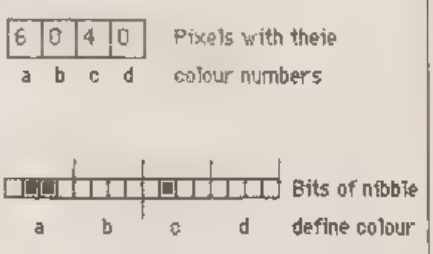


Fig 3

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Phoenix

Ian Wooff

This is the first part of Multi-Print which adds 22 new commands and 7 new functions to Basic.

These new commands are aimed at making better quality screen displays a lot easier to produce.

They are based around a routine which supports 42 characters to a line and 5 user definable windows, with a few other goodies thrown in for good measure.

If you have successfully assembled all the code making up Multi-Print, I will explain what the new commands/functions do and how you can use them.

Any program which contains any of the new commands/functions must have the Multi-Print code in memory.

This means the machine stack must be lowered to 61740. The program must also begin with the command RANDOMISE USR 61741. This can be achieved by adding the following lines to your program:

```
10 RANDOMISE USR 61741
   your program

9999 CLEAR 61740: LOAD ""MULTI-
PRINT""CODE : RUN
```

Save the program with SAVE "filename"-LINE 9999 to auto-run from line 9999, followed by the code making up Multi-Print.

The commands NEW and CLEAR turn Multi-Print off and so RANDOMISE USR 61741 must be used to turn it back on after using these commands.

The new commands can be used as ordinary commands such as the ones already present in Sinclair Basic. Functions though are treated slightly differently. The value returned by a function is given to the last numeric variable used.

LET a = *DPEEK 40000 (there must be a space after a=).

This will give the variable a the result of PEEK 40000 + 256 * PEEK 40001, while the following will do the same, as –

LET a = 0: PLOT 10,10: DRAW 100,100: *DPEEK 40000

The last variable ■ still a. The following will not though as –

LET a = 0: PLOT 10,10: LET S=100: DRAW s,s: *DPEEK 40000

The last variable is not a, but s and so the result will be given to the last variable s.

The commands and functions may have any form of parameters (ie, numberic, variable, expressions etc).

Attribute values used can be calculated using the method described in chapter 16 of the programming manual.

The commands are listed below followed by the functions.

*RAM – Selects 42 characters per line printing mode. 32 characters per line reselected by CLS, CLEAR and NEW commands.

*ROM – Selects 32 characters per line printing mode.

*CLS – Clears the screen, does not select 32 characters per line

*CURENT x – Selects current window (x=1 > 5).

*WINDOW w,x,y,z – Defines the area of the screen covered by current window. Windows may overlap each other. W = left margin (0–42), x = right margin (0–42), y = top line (0–24), z = bottom line (0–24). Windows are initially defined to cover the whole screen.

*SCROLL – Scrolls current window up one line. The window will scroll automatically when the print position reaches the bottom line of the current window. Both text and attributes are scrolled.

*COLOUR x – Gives attribute value used to fill bottom line of current window when it scrolls up. (x=0 > 255).

*SOUND x,y,z – Used to produce sound automatically on printing. X = 0 no sound y and z must be there but not used. X = 1 sound gived by data y = pitch z = duration. X = 2 sound according to print positions y and z must be there but not used. (X=1 > 3, y and z if used =0 > 65535).

*HOME – Moves 42 characters per line to top left of current window.

*SWAP x,y – Replaces attribute x for y in current window (x and y=1=0 > 255).

*WASH x – Replaces all attributes in current window with given attribute value (x=0 > 255).

*TFADE x – Totally fades the current window so no text remains in it (x=0 > 255).

*WCLS – Clears the current window.

*PAUSE x – Waits x/50 seconds. Is not stopped by a keypress (x=0 > 65535, 1/50 second > ■■ minutes).

*BOX w,x,y,z – Draws a box w and x giving bottom left corner of box, y giving the length, ■ giving the height of the box (w,x,y,z are all hi-res coordinates).

*DPOSE x,y – Does a double poke (x and y=0 > 65535).

*SCREEN x – Selects address of current screen. A second screen requires 6912 bytes.

The new commands, except box, cause output onto current screen. This allows a screen to be produced, without the uses seeing it being produced. If x is 0, the default value of 16384 is used

*MOVE – Moves current screen to 16384, so it can be seen.

*CSCT x – Provides address of start of character data used by 42 characters per line printing routine. If x=0 then the original data is reselected

*BREAK x – Disables break (x=0 > 1). X=1 break off x=0 break on.

*ONERROR x – Line jumped to when an error occurs (x=1 > 9999)

*NOTE x,y,z – Plays a note x = note 1 pitch, y = note 2 pitch, z = duration (x,y and z=0 > 255)

The functions produced by the program are as follows.

*DPDEK x – Does a double peek of address given (x=0 > 65535)

*RND – Returns a random number (0 to 1 inclusive)

*AND x,y – Returns a logical AND ■ x and y

*XOR x,y – Returns a logical XOR of x and y.

*OR x,y – Returns a logical OR of x and y (x and y including above =0 > 65535).

*ERROR – Returns code of last error.

*FADE x – Fades the current window with the value given. Try 20. Returns number of cells still holding data (x=0 > 255).

*When 42 column mode is selected the program will try to locate the text being printed into the current window. The text is automatically formatted so that words are not split in half over two lines.

This means all text printed ■ 42 mode ■ held in a 50 byte print buffer. This buffer is cleared when a space is received and so all text must be terminated by a space, for it to be printed in the correct position.

In 42 mode the number of user definable graphics is also increased to 37 the shapes on the number keys becoming user definable graphics. These graphics are only six bits wide.

One user definable Graphic character

```
X X X X X X - -
X X X X X X - -
X X X X X X - -
X X X X X X - -
X X X X X X - -
X X X X X X - -
X X X X X X - -
```

X's get printed, -'s do not and will be obliterated by next character

The new user definable graphics on the number keys only appear in 42 mode. To use all 37 graphic characters load the data in from address 62030 onwards

If you are just using the ordinary 21 graphics then load the data in from address 64216.

If you require graphics Axx to appear correctly in basic programs then you must lower the system variable UDG to 65357 by *DPOKE 23675,65367.

The 90 tokens in Sinclair Basic, codes 165-255, can also be redefined to any text you wish.

The program to produce the code needed by Multi-Print to redefine the tokens is given next week.

This is of use if you are writing programs which frequently use the same words and memory is a premium.

Multi-Print contains five new error messages, their meaning being given below

1) Window off screen. An attempt has been made to define a window which is not contained on the screen.

2) Invalid window number. An attempt has been made to set a current window of less than 1 or more than 5.

Print buffer full. More than 50 characters have been received without a space been sent.

Print out of screen. The coordinates given for printing were out of range.

Window parameter error. An attempt has been made to define a window with the bottom line above the top of the right margin to the left of the left margin.

```
  1 DEF FN h(a$)=FN b(a$(1))*16+FN b(a$
(2))
  2 DEF FN b(a$)=CODE a$-48-7*(a$>"9")
 10 CLEAR 61740
 20 FOR a=61741 TO 65239 STEP 8
 21 POKE 23692,100
 30 READ r$,r
 40 PRINT a;":-";r$;"=";r
 50 LET c=0
 60 FOR g=0 TO 7: LET z=FN h(r$): LET r
$=r$(3 TO )
 70 POKE a+g,z
 80 LET c=c+z: NEXT g
 90 IF c<>r THEN  PRINT "ERROR IN LINE
";1000+((a-61741)*1.25): STOP
100 NEXT a
110 POKE 64548,16: SAVE "MULTIPRINT"COD
E 61741,3498
1000 DATA "2A305C0137F17123",640
1010 DATA "70C93A3A5CFE0B28",826
1020 DATA "5AFE0C2804FE1420",706
1030 DATA "143AD0FAA7282C21",820
1040 DATA "37F1E5CD49FAF0CB",1509
1050 DATA "01AEC37D1B32D5FA",1035
1060 DATA "ED48CAFA78B12B13",1120
1070 DATA "21425C712370AF23",661
1080 DATA "77CD49FA2137F1E5",1205
1090 DATA "C3761BFDCB017E20",955
1100 DATA "072137F1E5C3B712",961
1110 DATA "CD0313CD49FA2A59",886
1120 DATA "5CCDA7112137F1E5",1039
1130 DATA "C3B412AF32D8FA21",1117
1140 DATA "5D5C35E5DFE1FE2A",1211
1150 DATA "20D134D021E5FADD",1247
1160 DATA "CB007E20E62A5D5C",786
1170 DATA "E50D4600DFE6DFDD",1417
1180 DATA "23DD8E002019E710",750
1190 DATA "F4CD49FAFD362600",1117
1200 DATA "E1DD6E0111D8FA26",1081
1210 DATA "00195E2356EBE948",780
1220 DATA "0C0600DD09E1225D",600
1230 DATA "5C21D8FA3418C0CD",1064
1240 DATA "7A1CCD3AF2CD7A1C",1010
1250 DATA "1B0CDF1809CB7A1C",647
1260 DATA "CD3AF2CD821CFDCB",1324
1270 DATA "007E2821FE0D2804",510
1280 DATA "FE3A2019CD49FAFD",1150
1290 DATA "CB017E20342137F1",743
1300 DATA "E521B71E5C3761B",1032
1310 DATA "D1FD36000AC378F1",1082
1320 DATA "CDD52038F320F1C9",1236
1330 DATA "CDA22D18F6FDCB00",1138
1340 DATA "7E28EADFFD36000B",941
1350 DATA "FE2C20E1CD49FAE7",1314
1360 DATA "C93AD8FA876F1190",1145
1370 DATA "FBC3D4F1CD35F2ED",1636
1380 DATA "43D1FACD35F2ED43",1330
1390 DATA "D3FACD2DF2FE0302",1420
1400 DATA "26F23256FAFE01C2",1115
1410 DATA "5JF4EB4803FAED43",1404
1420 DATA "CCFAED4BD1FAED43",1529
1430 DATA "CEFA1863CD35F2ED",1316
1440 DATA "43CAFA185A3EA0C3",1050
1450 DATA "A1F23EB0C3A1F23E",1301
1460 DATA "A8C3A1F232B6F23C",1500
1470 DATA "32B9F2CD35F2ED43",1281
1480 DATA "D1FACD35F22AD1FA",1460
1490 DATA "7CA8477DA94FCD2B",984
1500 DATA "2DCDFF2A1829CD35",870
1510 DATA "F278B120030107FB",1041
1520 DATA "05ED43D9FA1818ED",1061
1530 DATA "5FCD282D3E7FCD28",819
1540 DATA "2DEF0530CDFF2A18",871
1550 DATA "06CD2DF23257FA18",909
1560 DATA "56CD2DF232D1FACD",1292
1570 DATA "2DF232D2FACD2DF2",1289
1580 DATA "32D3FACD2DF232D4",1265
1590 DATA "FA32285C3AD3FA32",1086
1600 DATA "7E5CAFCD282D3AD2",951
1610 DATA "FACD46F33AD1FACD",1490
1620 DATA "282DAFCD46F3AFCD",1158
1630 DATA "282D3AD2FACD282D",893
1640 DATA "CD6E34CDB7243AD1",1058
1650 DATA "FACD282DCD6E34AF",1082
1660 DATA "CD46F3215827D918",919
1670 DATA "3DCD282DCDB724C9",976
1680 DATA "CD35F2ED43D1FACD",1468
1690 DATA "35F26069ED4BD1FA",1267
1700 DATA "7123701821CD35F2",817
1710 DATA "60694E2346CD2B2D",677
1720 DATA "CDFF2A1B113A8D5C",834
1730 DATA "083A58FA328D5CCD",892
1740 DATA "05F9083280D5C186A",675
1750 DATA "CD35F2FB7678B128",1206
1760 DATA "610B1BFB3AD5FACD",1106
1770 DATA "282DCDFF2A1853CD",899
1780 DATA "35F278B1C2A7F301",1197
1790 DATA "0040ED43D6FAC353",1110
1800 DATA "F411004001001B2A",395
1810 DATA "D6FAED5B1B34CD2D",1203
1820 DATA "F232D3FACD2DF232",1295
1830 DATA "D2FACD2DF247F33A",1324
1840 DATA "4B5C1F1F1F21D2FA",750
1850 DATA "0EFE56235E626B25",725
1860 DATA "2005EE10D30C622D",657
1870 DATA "20F5EE10D30C6B10",877
1880 DATA "EEFB1B62CD2DF2FE",1357
1890 DATA "02D226F232D0FA18",1024
1900 DATA "55CD2DF2F5FE06D2",1292
1910 DATA "77F6A7CA77F63AC2",1351
1920 DATA "FA21F5FF110B0047",882
1930 DATA "1910FD1159FA19EB",910
1940 DATA "214EFA010B00EDB0",786
1950 DATA "F121F5FF110B0047",873
1960 DATA "32C2FA1910FD1159",894
1970 DATA "FA19114EFA010B00",632
1980 DATA "EDB01B122A4F5C01",669
```

continued on page 26 ▶

◀ continued from page 25

```
1990 DATA "0500090186F57123",542
2000 DATA "701803CD65F62137",779
2010 DATA "F1E5C3761BCD1DF9",1293
2020 DATA "1BF4CD2DF232D1FA",1269
2030 DATA "CD2DF232D2FACD2D",1252
2040 DATA "F232D3FACD2DF232",1295
2050 DATA "D4FACDCFF9DA90F6",1731
2060 DATA "32D4FA3AD3FACDCF",1443
2070 DATA "F9DA90F632D3FA57",1455
2080 DATA "3AD4FABACA90F602",1508
2090 DATA "90F63250FACDB9F9",1409
2100 DATA "3254FA7A3251FACD",1092
2110 DATA "B9F93255FA3AD1FA",1356
2120 DATA "FE18D272F6573AD2",1203
2130 DATA "FAFE1BD272F68AD2",1494
2140 DATA "90F6CA90F63252FA",1364
2150 DATA "7A3253FA18883A52",805
2160 DATA "FA324FFA3A50FA32",1067
2170 DATA "4EFA1BF0CD2DF232",1134
2180 DATA "58FA328F5C08CDE9",1069
2190 DATA "F9CDF5F9CD00FA0B",1411
2200 DATA "E5772310FCE1CD1A",1107
2210 DATA "FA1D4120F318CDCD",1053
2220 DATA "2DF232D1FACD2DF2",1288
2230 DATA "0B3AD1FA57CDF5F9",1311
2240 DATA "CDE9F9CD00FA08E5",1379
2250 DATA "BE2001722310F9E1",862
2260 DATA "CD1AFA411D20F018",871
2270 DATA "A3CD21FAAFE57723",1209
2280 DATA "10FCE1CDDAF91D41",1259
2290 DATA "20F31B90CD2DF257",1022
2300 DATA "DD210000CD21FAE5",971
2310 DATA "ED5FA62B01AA77A7",995
2320 DATA "2802DD232310F1E1",815
2330 DATA "CDDAF91D4120EBDD",1251
2340 DATA "E5C1C9CD39F5CD2B",1378
2350 DATA "2DCDFF2A18B94F32",981
2360 DATA "D4FACD2DF257CD3D",1307
2370 DATA "F53AD4FA3CCA26F5",1310
2380 DATA "32D4FA78B120EF18",1104
2390 DATA "9EDD218F5CF53AC9",1151
2400 DATA "FAA7CABBF5FE1FCA",1538
2410 DATA "FAF5FE1ECA09F6FE",1490
2420 DATA "10CA1AF6FE11CA26",1001
2430 DATA "F6FE13CA38F6FE17",1300
2440 DATA "CA15F6FE12CA47F6",1260
2450 DATA "FE14CA56F6C9F1FE",1504
2460 DATA "20D273F721C9FAFE",1342
2470 DATA "162003361FC9FE10",613
2480 DATA "200277C9FE112002",659
2490 DATA "77C9FE13200277C9",947
2500 DATA "FE17200277C9FE12",903
2510 DATA "200277C9FE142002",662
2520 DATA "77C9FE06CAFBFBFE",1532
2530 DATA "0DCAE6F8C9F1FE1B",1413
2540 DATA "D289F6324FFA3E1E",1064
2550 DATA "32C9FAC9F1EDCFF9",1604
2560 DATA "324EFAAF32C9FAC9",1255
2570 DATA "CDE6F818EFD13A8F",1356
2580 DATA "5CE6F8B2328F5C18",1057
2590 DATA "EAD13A8F5CE6C7CB",1368
2600 DATA "22CB22CB22B2328F",879
2610 DATA "5C1808F1DDCB00B6",1179
2620 DATA "FE0120CFBDCB00F6",1164
2630 DATA "18C9F1DDCB00BEFE",1334
2640 DATA "0120C0DDCB00FE18",927
2650 DATA "BAF1DDCB0296FE01",1258
2660 DATA "20B1DDCB02D618AB",1044
2670 DATA "2A4F5C0105000936",282
2680 DATA "F4233609C9CD10F6",1010
2690 DATA "1B1ECD10F6F13E01",825
2700 DATA "1816219DFA22C6FA",955
2710 DATA "3E02180CCD10F63E",629
2720 DATA "031805CD10F63E04",565
2730 DATA "32C8FAED4BCAFA78",1384
2740 DATA "B1C265F176FDCB01",1288
2750 DATA "AEFDCB304EC4CD0E",1171
2760 DATA "210000FD7437FD74",826
2770 DATA "26220B5C232216SC",398
2780 DATA "CDB016FDCB37AECD",1293
2790 DATA "6E0DFDCB02EE3E53",964
2800 DATA "D73E2CD73AC8FA3C",1104
2810 DATA "3F32C8FA3AD1FA3C",937
2820 DATA "D7CD08F7ED4B45SC",1146
2830 DATA "CD1B1A3E3AD7FD4E",924
2840 DATA "0D0600CD1B1ACD97",653
2850 DATA "10FB360AFFFDCB01",1045
2860 DATA "9EC865F62137F1E5",1268
2870 DATA "C3AC1211127F3ACB",925
2880 DATA "FACD140CC9FF5769",1135
2890 DATA "6E646F77206F6666",787
2900 DATA "207363726565EE49",873
2910 DATA "6E76616C69642077",789
2920 DATA "696E646F77206E75",804
2930 DATA "6D6265F25072696E",959
2940 DATA "7420627566666572",782
2950 DATA "2066756CEC507269",894
2960 DATA "6E74206F7574206F",745
2970 DATA "662073637265SEEE",902
2980 DATA "57696E646F772070",776
2990 DATA "617261D65746572",849
3000 DATA "206572726FF2ED5B",1042
3010 DATA "C6FA21C2FAED52DA",1462
3020 DATA "7FF6EB772322C6FA",1244
3030 DATA "21C5FABE3077FEB5",1256
3040 DATA "3037FE20C01190FA",992
3050 DATA "2AC6FAED52E57DCB",1366
3060 DATA "276FCB27B5673A4E",764
3070 DATA "FA6F3A51FA95BCDC",1307
3080 DATA "E6FBE1452190FA7E",1325
3090 DATA "E5C5CD10FBC1E123",1348
3100 DATA "10F52190FA22C6FA",1170
3110 DATA "C921C6FA35D6A5B7",1249
3120 DATA "6F2600ED5BC3FA19",947
3130 DATA "4E2346235E2356EB",668
3140 DATA "ED42552AC6FA0AFE",1142
3150 DATA "A5300A7723031520",433
3160 DATA "F522C6FAC9C5D523",1373
3170 DATA "22C6FACDC6F7D1C1",1534
3180 DATA "2AC6FA1BE821C6FA",1227
3190 DATA "35FDCB0186D6A5CD",1228
3200 DATA "100CC92AD9FAEB6F",1084
3210 DATA "2600292919EB3A",479
3220 DATA "4EFAF5CDB9F94FF1",1532
3230 DATA "E607473A4FFACB27",937
3240 DATA "CB27CB27F5E63887",1150
3250 DATA "876FF1E6C0CDB9F9",1548
3260 DATA "6705ED5BD6FA19D1",1342
3270 DATA "79856F7CCE00670E",812
3280 DATA "0BC51AD51103FF4F",798
3290 DATA "780600A72B0DCB39",606
3300 DATA "CB1BCB3BCB1ACBF8",1172
3310 DATA "3D18F07EA3B1DDCB",1215
3320 DATA "025628022FAB7723",502
3330 DATA "7EA2B0DDCB025628",1016
3340 DATA "022FAA772B24D113",645
3350 DATA "C10D20C53A4FFA47",893
3360 DATA "3A4EFACDB9F94FCD",1309
3370 DATA "A6F9D5C5010040ED",1127
3380 DATA "5BD6FAED4219C1D1",1285
3390 DATA "3A8F5C4F717BE607",842
3400 DATA "A72B022371324EFA",743
3410 DATA "C6062151FABE2B29",839
3420 DATA "324EFA3A56FAFE01",1027
3430 DATA "2B10FE02C03A4EFA",890
3440 DATA "6F3A4FFA5FAF6757",958
3450 DATA "18072ACCFAED5BCE",1061
3460 DATA "FACDB503D0218F5C",1128
3470 DATA "C93A4FFA2153FABE",1144
3480 DATA "3C302D324FFA3A50",670
3490 DATA "FA1BC53A4EFAFEB0",1239
3500 DATA "30E73EB0324EFAC9",1048
3510 DATA "21[illegible]1875G4",323
3520 DATA "1E01EDB03A8D5C77",854
3530 DATA "01FF02EDB0C3CBF4",1315
3540 DATA "3A54FA473A52FA4F",932
3550 DATA "3A55FA673A53FA6F",998
3560 DATA "7D91577C905F1CD5",961
3570 DATA "79E61BC640677987",996
3580 DATA "878787878D6FC1C5",1169
3590 DATA "E5AF545DBB2816C5",1024
3600 DATA "212000441970FE20",569
3610 DATA "30047CC6767E5ED",950
3620 DATA "B0B1C110EA41AF12",1086
3630 DATA "1310FDE1C1247CE6",1095
3640 DATA "0720D43A52FA4F3A",778
3650 DATA "53FA9108CDE9F906",1179
3660 DATA "00CD00FAEB212000",755
```

```
3670 DATA "190BC5E5E5EDB0E1",1326
3680 DATA "11200019D1C13020",569
3690 DATA "F1EB3A57FA417723",1090
3700 DATA "10FC3A50FA324EFA",1034
3710 DATA "C978CB2FCB2FCB2F",1071
3720 DATA "C6586778E6070F0F",776
3730 DATA "0F816FC9CB3FCB3F",988
3740 DATA "CB3FC978E6F8C640",1327
3750 DATA "6778E6070F0F0F81",634
3760 DATA "6FC9D5CB2757CB27",1096
3770 DATA "C602B2D1C9247CE6",1130
3780 DATA "07C07DC6206FD87C",1005
3790 DATA "D60B67C93A54FA4F",997
3800 DATA "3A55FA913C4F47C9",949
3810 DATA "3A52FA5F3A53FA93",1023
3820 DATA "3C5FC9C53A54FA4F",1024
3830 DATA "3A52FA47CDA6F9D5",1294
3840 DATA "ED5BD6FA010040ED",1094
3850 DATA "4219D1E1C9D51120",956
3860 DATA "0019D1C9CDE9F9C9",1327
3870 DATA "F5F978CB27CB27C8",1364
3880 DATA "275FC53A54FA4F3A",860
3890 DATA "52FA47CDC0F9D501",1263
3900 DATA "0040EDSBD6FAED42",1159
3910 DATA "19D1C1C9FB3600FF",1190
3920 DATA "C9020002FE001700",482
3930 DATA "1F0238302000 2FE",403
3940 DATA "0017001F02383802",170
3950 DATA "0002FE0017001F02",312
3960 DATA "3836020002FE0017",393
3970 DATA "001F02383B020002",149
3980 DATA "FE0017001F023838",422
3990 DATA "020002FE0017001F",312
4000 DATA "023838000000000",114
4010 DATA "0000000000000000",0
4020 DATA "0000000000000000",0
4030 DATA "0000000000000000",0
4040 DATA "0000000000000000",0
4050 DATA "0000000000000000",0
4060 DATA "0000000000010000",1
4070 DATA "A590FA0300000064",662
4080 DATA "000A000000000000",10
4090 DATA "FF004000D7FAECF1",1261
4100 DATA "FAF1F2F100F2F7F1",1704
4110 DATA "0542524541B0606",374
4120 DATA "434F4C4F55520604",478
4130 DATA "4641444506044E4F",439
4140 DATA "54450207 4F4E4552",470
4150 DATA "524F52060352414D",476
4160 DATA "0804484F4D450803",320
4170 DATA "524F4D0806534352",484
4180 DATA "4F4C4C0805534F55",491
4190 DATA "4E4402053574150",467
4200 DATA "0406435552454E54",475
4210 DATA "0A0A5241534B0604",375
4220 DATA "5744E444F5/0003",475
4230 DATA "434C53080544504 5",456
4240 DATA "4546060544504F46",457
4250 DATA "4504055446414445",434
4260 DATA "060457434C530805",336
4270 DATA "5041555345060545",462
4280 DATA "52524F5208065343",489
4290 DATA "5245454E06035345",459
4300 DATA "4508044353455406",390
4310 DATA "03524E440803424F",387
4320 DATA "580003414E440402",308
4330 DATA "4F520403584F5204",421
4340 DATA "F1F3E6F260F5BBF3",1727
4350 DATA "89F241F4CBF450F4",1459
4360 DATA "5AF459F2FCF4FEF3",1658
4370 DATA "D9F45FF472F362F3",1498
4380 DATA "4DF368F526F585F3",1331
4390 DATA "91F39CF3AEF3C3F2",1641
4400 DATA "D4F2EEF292F297F2",1715
4410 DATA "9CF2000000000000",398
4420 DATA "0000001010101000",64
4430 DATA "1000002424000000",88
4440 DATA "000000287C28287C",368
4450 DATA "280000107C507C14",404
4460 DATA "7C100068681020 58",484
4470 DATA "5800001028102A44",270
4480 DATA "3A0000081000000",82
4490 DATA "0000001020202020",144
4500 DATA "1000002010101030",144
4510 DATA "2000000028107C10",228
4520 DATA "2800000010107C10",212
4530 DATA "1000000000000010",32
4540 DATA "1020000000007C00",172
4550 DATA "0000000000000018",24
4560 DATA "1800000004081020",84
4570 DATA "400000384C545464",464
4580 DATA "3B000030101010 10",168
4590 DATA "3B000038440438 40",304
4600 DATA "7C000038441B0444",344
4610 DATA "3B000008182B487C",324
4620 DATA "0B00007C407B0444",388
4630 DATA "3B000038407B4444",432
4640 DATA "3B00007C040B1020",240
4650 DATA "2000003844384444",348
4660 DATA "3B00003B44443C04",312
4670 DATA "3B00000000100000",72
4680 DATA "1000000010000010",48
4690 DATA "1020000004081008",84
4700 DATA "0400000003C003C",124
4710 DATA "0000000010080408",36
4720 DATA "1000003B440B1000",164
4730 DATA "100000385 44C5C40",388
4740 DATA "3B00003B44447C44",440
4750 DATA "4400007B44784444",512
4760 DATA "7B00003B44404044",440
4770 DATA "3B00007048444448",448
4780 DATA "7000007C40784040",548
4790 DATA "7C00007C407B4040",560
4800 DATA "4000003844404C44",396
4810 DATA "3B00004444 7C4444",452
4820 DATA "4400003B10101010",188
4830 DATA "3B00000404044444",204
4840 DATA "3B00004B50605048",456
4850 DATA "4400004040404040",388
4860 DATA "7C0000446C544444",520
4870 DATA "440000446454 4C",480
4880 DATA "4400003B44444444",396
4890 DATA "3B00007B4444 7B40",496
4900 DATA "4000003B44444454",408
4910 DATA "3B00007B4444 7B4B",512
4920 DATA "4400003B4B3B0444",316
4930 DATA "3B00007C10101010",244
4940 DATA "1000004444444444",356
4950 DATA "3B00004444444428",368
4960 DATA "1000004444444454",372
4970 DATA "2B00004428101028",220
4980 DATA "4400004444281010",276
4990 DATA "1000007C08102040",260
5000 DATA "7C00003B20202020",308
5010 DATA "3B00000040201008",176
5020 DATA "0400003B0B080B08",92
5030 DATA "3B00001038541010",244
5040 DATA "1000000000000000",16
5050 DATA "00FC001B24702020",488
5060 DATA "7C00000038043C44",312
5070 DATA "3C00004040784444",444
5080 DATA "7B00000038404040",368
5090 DATA "3B00000404 3C4444",260
5100 DATA "3C00000038447B40",368
5110 DATA "3C00000C10181010",144
5120 DATA "1000000 03C44443C",272
5130 DATA "0438004040784444",444
5140 DATA "4400001000301010",164
5150 DATA "3B00000400040404",72
5160 DATA "2418002028303028",268
5170 DATA "2400002020202020",196
5180 DATA "1B00000068545454",380
5190 DATA "5400000078444444",408
5200 DATA "4400000038444444",328
5210 DATA "3B00000078444478",432
5220 DATA "404000003C44443C",384
5230 DATA "0406000010202020",134
5240 DATA "2000000038403804",212
5250 DATA "7B00001038101010",240
5260 DATA "0C00000044444444",284
5270 DATA "3B00000044442828",272
5280 DATA "1000000044545454",336
5290 DATA "2B00000044281028",204
5300 DATA "440000004444443C",332
5310 DATA "0438000070081020",240
5320 DATA "7C00003844545444",484
5330 DATA "3B00000004 78AB28",388
5340 DATA "2B00000010284428",204
5350 DATA "100000010 6C007C",264
5360 DATA "0000007B84B4A484",776
5370 DATA "B47B000000000000",252
```

Pawn Grabber

Simon Cooke

First assemble the program, PAWNGRAB.TOS, with DevpacST or a similar assembler to create an executable TOS file.

Double click PAWNGRAB.TOS from the desktop, and press a key when loaded. Load *The Pawn* as normal, without resetting the computer and select the picture you wish to save by pulling it down as far as it will go. Next, remove Pawn disc, insert save disc, and press the Alternate/Help keys together (the picture will go weird, this is normal).

The screen will now save under PAWNx.NEO (x starting at 1 and going through the character set). When the drive stops, insert the Pawn disk and continue as normal.

Please note that the saved picture may have two or more corrupt inks, which can easily be corrected using normal *Neochrome* ink settings.

This is because *The Pawn* uses interrupts to display more than 16 colours on the screen at once, so that the text and menu bar stay the same colour. The text on the picture will also be corrupt, due to them being displayed in medium resolution as opposed to low rez.

This may work with *Guild Of Thieves*, and other programs, if they leave the *VBL* queue alone, and boot from the desktop.

```
start   dc.w $a00a
        pea scode(pc)
        move.w #38,-(sp)
        trap #14
        addq.l #6,sp
        pea string1(pc)
        move.w #9,-(sp)
        trap #1
        addq.l #6,sp
        move.w #7,-(sp)
        trap #1
        addq.l #2,sp
        clr.w -(sp)
        move.l #$1200,-(sp)
        move.w #$31,-(sp)
        trap #1

scode   lea savepic(pc),a1
        move.l $456,a0
        adda.l #28,a0
        move.l a1,(a0)
        rts

savepic movem.l d0-d7/a0-a6,
        -(sp)
        tst.w $4ee
        bmi exit
        move.w #-1,$4ee
        clr.l d0
        move.b $ff8201,d0
        swap d0
        move.b $ff8203,d0
        lsl.w #8,d0
        move.l d0,a6
        lea filename+4(pc),a1
        move.b (a1),d0
        addi.b #1,d0
        move.b d0,(a1)
        clr.w -(sp)
        pea filename(pc)
        move.w #$3c,-(sp)
        trap #1
        addq.l #8,sp
        tst.l d0
        bmi.s exit
        move.w d0,handle
        lea dummy(pc),a0
        moveq.l #4,d0
        bsr write
        lea palbuf(pc),a0
        lea $ff8240,a1
        moveq.l #15,d0
palop   move.w (a1)+,d1
        andi.w #$777,d1
        dbra d0,palop
        lea palbuf(pc),a0
        moveq.l #32,d0
        bsr write
        lea dummy(pc),a0
        moveq.l #92,d0
        bsr write
        move.l a6,a0
        move.l #32000,d0
        bsr write
        move.w handle,-(sp)
        move.w #$3e,-(sp)
        trap #1
        addq.l #4,sp
exit    movem.l (sp)+,d0-d7/a0-a6
        rts

write   move.l a0,-(sp)
        move.l d0,-(sp)
        move.w handle,-(sp)
        move.w #$40,-(sp)
        trap #1
        lea 12(sp),sp
        tst.l d0
        bmi.s exit2
        rts
exit2   addq.l #2,sp
        bra.s exit

palbuf  ds.w 16
handle  dc.w 0
dummy   ds.b 92
filename dc.b 'PAWN0.NEO',0
string1 dc.b 'Pawn Screen Grabber v1.0',13,10
        dc.b 'Written by Simon Cooke',13,10
        dc.b '** Installed **',13,10,0
```

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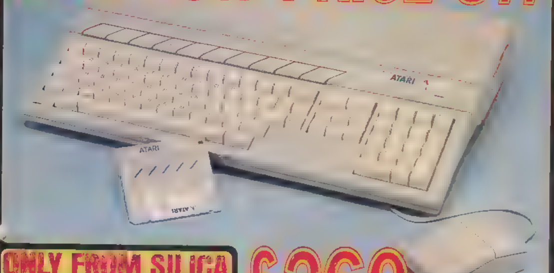

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.... Postcode: ....

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Newsmaker

Simon T Goodwin

Part two of the desktop publishing program is detailed and listed this week. Also, if you'd like a copy of *Newsmaker* on disc with example files then send £7.00 to 41 Fountains Drive, Acklam, Middlesbrough, Cleveland TS5 7LW.

Banner

This option allows you to print Banners or Headlines in one of three styles: Emphasized, Underlined or Double-Height. In each case you must enter the required text and then position it using the cursors and copy.

Files

This option allows you to load and save whole pages, screens or blocks (to Cut and Paste) to disc

You can save a block that you have just Cut. If you load a block you can then Paste it anywhere on screen

Loading and saving pages is easy (make sure you have 51K of space on disc before saving). You can load Mode 2 screen designs in with the Load Screen option. In each case you must specify a filename of not more than 8 characters.

Print

This is the most important option of all. The results of printing a page or a screen will depend on the quality of your printer.

I think the program is **Epson** compatible but I have only tested it on an Amstrad DMP 2000 printer. The page is A5 size when printed

Whilst the quality of output is not up to professional standards it is quite readable. Experienced readers may want to insert their own printer routines. A quicker, low quality dump can be achieved by typing:

```
3770 PRINT #8,CHR$(27);"A";CHR$(7);
3780 FOR 1in=pixel TO 0 STEP -14
3910 PRINT #8,CHR$(27);"A";
CHR$(7);:PRINT #8
```

Miscellaneous

The first option of this sub-menu is vital, Move. Using this you can move between the 3 parts that make up the full page, numbered 1, 2 and 3. This is quick and easy.

It will take time to master *Newsmaker*, in order to make the most of it. Remember that as a last resort pressing Esc will return to the main menu.

There are a few tips I can give to save time and effort:

1. When drawing vertical lines that cover more than one of the 3 screens do not move the cursor horizontally before moving screens. This will make it easy to match up the two lines.
2. Do not cut areas larger than two-thirds the size of the screen or the computer may crash
3. It is best to put text on screen before graphics to avoid accidentally wiping text of the screen when drawing.
4. If you add Cut to block filenames this will enable you to identify them easier.
5. Do not position text on the top line of a screen as it may be cut off during printing.

```
1730 MOVE storex,storey:FILL 1
1740 RETURN
1750 :
1760 :
1770 GOSUB 2340
1780 PRINT "DENSITY?"
1790 PRINT "(default=5)
1800 INPUT "",dense
1810 WINDOW 1,80,1,25
1820 GOSUB 2400
1830 IF dense<0 THEN 1770
1840 spray=1:GOTO 1490
1850 :
1860 :
1870 GOSUB 2340
1880 WINDOW 1,80,1,25
1890 LOCATE 15,5:PRINT "MOVE CURSOR AND PRESS COPY TO"
1900 LOCATE 15,6:PRINT "DEFINE POSITION,WIDTH"
1910 LOCATE 15,7:PRINT "AND LENGTH OF WINDOW."
1920  TAG:MOVE 15*8,280:PRINT "EG:    +       +";
1930 MOVE 15*8,250:PRINT "       +";
1940 TAGOFF:LOCATE 15,13:PRINT "PRESS A KEY"
1950 WHILE INKEY$="":WEND
1960 GOSUB 2400
1970 x=storex:y=storey
1980 FOR n=1 TO 255:CALL &BB1B:NEXT
1990 GOSUB 4390:posx=x+4:posy=y-6
2000 FOR n=1 TO 255:CALL &BB1B:NEXT
2010 GOSUB 4390:wx=x+4:wy=y-6
2020 IF wx<posx THEN SOUND 1,100:GOTO 2010
2030 FOR n=1 TO 255:CALL &BB1B:NEXT
2040 GOSUB 4390:lx=x+4:ly=y-6
2050 IF ly>posy THEN SOUND 1,100:GOTO 2040
2060 b%=0:!GCOORD,posx,posy,@b%
2070 !CUT,b%,pas,INT((wx-posx)/8),INT((posy-ly)/2)
2080 sd=INT((wx-posx)/8):se=INT((posy-ly)/2)
2090 storex=x:storey=y
2100 RETURN
2110 :
2120 :
2130 IF sd=0 AND se=0 THEN RETURN:ELSE GOSUB 2340
2140 x=storex:y=storey
2150 WINDOW 1,80,1,25
2160 TAGOFF
2170 LOCATE 15,5:PRINT "Move the cursor to the"
2180 LOCATE 15,6:PRINT "position you want to paste"
2190 LOCATE 15,7:PRINT "to and press COPY."
2200 LOCATE 15,13:PRINT "PRESS A KEY"
2210 WHILE INKEY$="":WEND
2220 GOSUB 2400
2230 FOR n=1 TO 255:CALL &BB1B:NEXT
2240 GOSUB 4390:posx=x+4:posy=y-6
```

```
2250 c%=0:|GCOORD,posx,posy,@c%
2260 |PASTE,c%,pas,sd,se
2270 storex=x:storey=y
2280 RETURN
2290 :
2300 :
2310 RETURN
2320 :
2330 :
2340 |CUT,49152+160+13,z,40,100
2350 |FWINDOW,55469,30,90,0
2360 FOR n=1 TO 255:CALL &BB1B:NEXT
2370 PLOT 104,360:GOSUB 4620
2380 WINDOW 16,42,4,13
2390 RETURN
2400 |PASTE,49152+160+13,z,40,100:RETURN
2410 :
2420 :
2430 |CUT,49152+160+26,z,20,100
2440 |FWINDOW,55482,13,50,0
2450 PLOT 210,360:GOSUB 4580
2460 RESTORE 4680:|UPRINT,220,354,"Banner"
2470 TAG:FOR n=1 TO 4:READ a$:MOVE 220,344-(n*16):PRINT a$;:NEXT:TAGOFF
2480 a%=0:|MENU,4,0,0,1,1,220,328,@a%
2490 |PASTE,49152+160+26,z,20,70
2500 IF a%=4 THEN RETURN
2510 WINDOW 28,63,4,8
2520 |CUT,55482,z,48,60
2530 |FWINDOW,55482,38,50,0
2540 PLOT 210,360:GOSUB 4610
2550 PRINT "Enter text then use cursors to place
2560 FOR n=1 TO 255:CALL &BB1B:NEXT:f$="":INPUT "",f$
2570 |PASTE,55482,z,48,60
2580 WINDOW 1,80,1,25
2590 x=storex:y=storey:GOSUB 4390:x=x-4:y=y-6:storex=x:storey=y
2600 IF a%=1 THEN |EMPHASIZE,x%,y%,f$
2610 IF a%=2 THEN |UPRINT,x%,y%,@f$
2620 IF a%=3 THEN GOSUB 2660
2630 RETURN
2640 :
2650 :
2660 x2=x:y2=y:x1=INT(x/8):y1=400-y:x=x1:y=y1/16
2670 IF x<1 THEN x=1
2680 IF y>24 THEN y=24
2690 IF rt=1 THEN RETURN
2700 LOCATE x,y:|DPRINT,f$
2710 RETURN
2720 :
2730 :
2740 |CUT,49152+160+38,z,20,120:WINDOW 40,49,5,13
2750 |FWINDOW,55494,13,90,0:PLOT 305,360:GOSUB 4590
2760 FOR n=1 TO 255:CALL &BB1B:NEXT
2770 RESTORE 4690:|UPRINT,320,354,"Files"
2780 TAG:FOR n=1 TO 6:READ a$:MOVE 320,330-(n*16):PRINT a$;:NEXT:TAGOFF

2790 a%=0:|MENU,6,0,0,1,1,320,314,@a%:|PASTE,49152+160+38,z,20,110
2800 ON a% GOSUB 2840,2920,3220,3010,3380,3350
2810 IF eror=1 THEN FOR n=1 TO 255:CALL &BB1B:NEXT:WHILE INKEY$:WEND:|PA
STE,49152+160+38,z,20,100
```

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Oo-er, sounds a bit rude

It must be dead handy for Virgin Games to be part of Richard Branson's little empire, since it must make it relatively easy to tie up licensing deals with other parts of the Virgin group. The Virgin publicity machine automatically works in your favour and you don't even have to worry too much about having good ideas since somebody's already done it for you.

In the wake of the transatlantic speedboat and ballooning games, Virgin Games has now produced *How To Be A Complete Bastard*, based on the book published - oh, good neavens - by Virgin Books.

The tie-in here is mainly with Ade Edmondson, co-author of the *Bastard book*, and most well-known as the psychotic Vivien in *The Young Ones*.

The idea behind the game isn't a bad one; playing part of Ade (they don't say which part, but you can bet it's one of the rude ones) you gatecrash a yuppie party and attempt to behave in the most disgusting possible manner in order to achieve the status of a complete bastard.

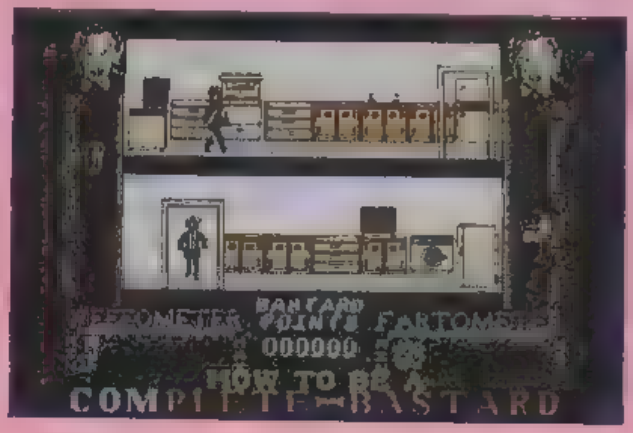
If I tell you that the screen display includes a Weeometer, Drunkometer, Smellometer and Fartometer you should begin to realise that the humour is pretty basic. Mind you, any game that has control keys for left/right, up/down and Fart can't be all bad.

Once you're inside the house, you explore the various rooms looking for opportunities to offend guests: eat too much, throw up and throw doggy-do around.

The main screen display is split into two, a technique called Bastavision. The two halves show your position in each room from different angles, and you can rotate each view so that you can see everything in the room. Although it looks like a simple two-dimensional display (moving left/right across the screen) you can move into and out of the screen, creating a limited 3D effect. Because of this you need to keep an eye on the two halves of the screen so that you can line yourself up with the people and objects that are also in the room.

I found this a bit tricky, and spent quite a lot of time nudging my way around rooms trying to get into the right position.

Along the way you'll find various cupboards, bookshelves and so on, which you can search through. When you find something a menu will appear in the lower half of the screen telling you what options are open to you. Most things can be thrown around, but some items (such as a frozen pizza - no prizes for guessing what you can do with that) need to be kept until you find somewhere, or someone, to use it on.



You score points for doing obnoxious things, and eventually you aim to light up all the letters in the phrase 'Complete Bastard', at the bottom of the screen. But doing anything 'girlie' will lose you points.

It's not just the humour that is basic though, as the graphics are a little bit on the stick-insect side, too.

The only real weakness in the game is that the action on the screen doesn't always match what should be happening. On one occasion I dropped some stinkbombs in a crowded room to try and get rid of everyone in it. The caption 'that's a real room clearer' appeared but absolutely nothing happened!

Because of this the screen display can get a bit monotonous at times, simply because few of your actions seem to have any visible effect. And the option to 'do nothing' can appear rather too frequently as well.

HTBACB is really the computer equivalent of a dirty seaside postcard, and as such is crude and mildly amusing. Like a lot of British humour it relies a bit too heavily on naughty words like 'wee' and 'fart' and while the game may well prove enjoyable for a while, it's quite possible that the novelty may wear off after a while.

Stephen Dean

Program *How To Be A Complete Bastard* **Type** Arcade **Machine** Spectrum/Amstrad CPC/C64 **Price** £7.95/£8.95/£9.95 **Supplier** Virgin Games, 2-4 Vernon Yard, Portobello Road, London W11 2DX.

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A tennis game that allows you to play all the main Grand Slam tournaments and takes into account the different types of playing surface.

The game is quite playable, though the graphics aren't what you might expect from an Amiga game.

Amstrad PCW

Program *ACE* **Type** Flight simulation **Price** £19.95. **Supplier** Cascade Games, 1–3 Haywra Crescent, Harrogate HG1 5BG

Cascade's old air-combat game finally finds its way onto the PCW. Although the game calls itself a simulator, the emphasis is on action rather than twiddling dials which makes it more playable than many flight simulators.

Atari ST

Program *Mortville Manor* **Type** Adventure **Price** £24.95 **Supplier** Eidersoft, The Office, Hall Farm, N. Ockendon, Upminster, Essex RM14 3QH

An Agatha Christie style mystery involving a dead/missing person and a house full of relatives. The game has some excellent sound effects, some not-quite-so-excellent voice synthesis (with a heavy French accent), and graphics that aren't as good as the ST is capable of.

Program *Ranarama* **Type** ST **Price** £19.95 **Supplier** Hewson, Hewson House, 56b Milton Trading Estate, Milton, Abingdon, Oxon OX14 4RX

ST version of Hewson's hit Gauntlet-style game, and its first 16-bit release. A great improvement over the Spectrum version, and with some excellent music and sound effects.

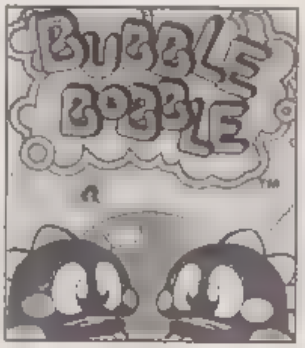
Commodore 64

Program *Implosion* **Type** Arcade **Price** £9.95, (£14.95 on disc) **Supplier** Cascade Games, 1–3 Haywra Crescent, Harrogate HG1 5BG

A fast action shoot 'em up written by 16-year-old Joe Booth. The animation is very smooth and the sound effects are impressive. It's not quite state-of-the-art but Joe Booth will probably be a millionaire before I am.

Program *Bubble Bobble* **Type** Arcade **Price** £7.95 **Supplier** Firebird, 64–76 New Oxford Street, London WC1A 1PS

A conversion of the successful coin-op game. It's not exactly pushing back the frontiers of programming but it's one of those cute, simple games that can be enormously addictive.



Spectrum

Program *Implosion* **Type** Arcade **Price** £8.95 **Supplier** Cascade Games, 1–3 Haywra Crescent, Harrogate HG1 5BG

Program *Xecutor* **Type** Arcade **Price** £7.95 **Supplier** Edge, 36/38 Southampton Street, Covent Garden, London WC2E 7HE

The latest in the recent spate of rather good shoot 'em ups. This is a vertically scrolling game rather than horizontal and has a simultaneous two-player mode just like a real arcade game.

Program *Ronnie Goes To Hollywood* **Type** Adventure **Price** £3.99 (available by mail order only) **Supplier** Eighth Day Software, 18 Flaxhill, Moreton, Wirral, Merseyside

It's been a while since I've seen a decent adventure for the Spectrum, but 8th Day's budget games are always worth a look. This is a moderately difficult adventure following Ronnie Reagan's activities for a week in Hollywood.

The best budget buy of the moment has to be the batch of six old Ultimate games that Mastertronic are putting out on the Ricochet label over the next fortnight.

Whilst some of the later games failed to match Ultimate's own high standards they were generally still as good as anything else on the shelves at the time, and the best of them have yet to be beaten for sheer addictiveness and playability.

***Sabrewulf* was the last of Ultimate's '2D' games, a maze game in a jungle setting. The format might look familiar by now, but it was Ultimate that invented it, and this was the game that introduced the Sabreman to the games playing public. Skipping over *Underwurlde*, which was their next release but hasn't yet been 'budgetised', we come to *Knightlore* and *Alien 8*.**

When *Knightlore* was released towards the end of '84 the entire games industry collectively gasped and stood back in astonishment, though only for a few seconds before running off and copying it!

The game continued the adventures of Sabreman as he searches the depths of an old castle to find a cure to the curse that turns him into a rather cuddly werewolf every night. The 3D animation and the complex problems that it made possible were a huge innovation in games programming, and while the look may have been copied the game has never been beaten for sheer addictiveness.

***Alien 8* was the follow up to *Knightlore* and basically took the same formula into an outer space setting. Sabreman was replaced by the *Alien 8* droid, and the castle became a spaceship. Ultimate took a bit of flack because of the similarities between the games, but the game was more complex than *Knightlore* and it would have been daft to drop a winning formula after just one game. I'm biased because *Knightlore* is my all-time favourite game, but both of these games at a budget price represent mega-enormous-value and if you haven't already got them then you've got no excuse for not buying them now (OK, we get the hint, Ed!).**

These two games together gave Ultimate a reputation that no company, not even Ultimate themselves, were ever able to match, and after this period things started to go downhill. *Knightshade* attempted to alter the formula with more shoot 'em up action and less puzzle solving, but it didn't quite work (the same applies to *Blackwyche*, the most recent of this group of games).

Still, if the later games didn't reach the dizzy heights of their previous efforts, Ultimate never released a really bad game during this period and even the 'worst' of this batch is excellent value at the new price. They were all released over a range of formats, so check the individual machine listings for details.

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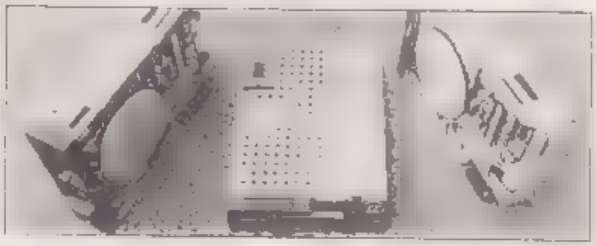

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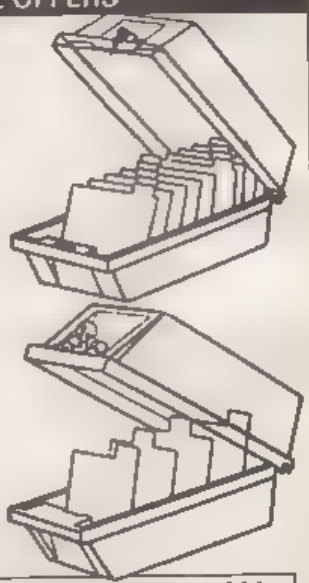

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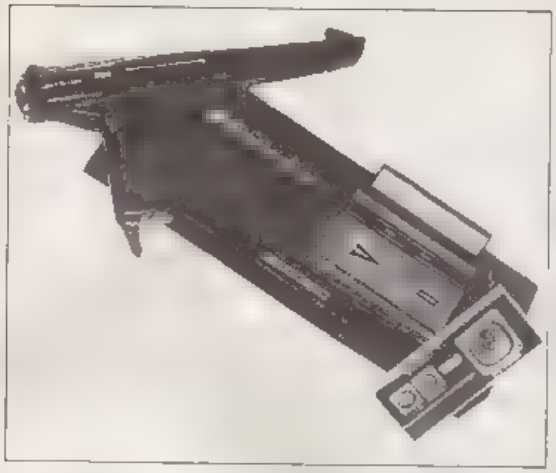

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As you are playing this game your young son or daughter, brother or sister is watching you doing this. It doesn't matter what age they are, all they see you doing is blasting somebody wearing a particular set of clothes. So when they go to school they see somebody from another school wearing the same set of clothes as that schools' bully, so what they do is beat them up, regardless of what they have done, just because they have seen you doing the same thing on the computer.

You might think "Children wouldn't do that." But children have been known to mimic adults and older children, and children and even adults have been known to mimic their favourite television or film character, so why not something off the computer?

I shall take an example of a young child playing the game Frogger, where part of the game involves crossing a large busy road. Everytime the frog is killed the child feels no pain and just starts the game again. That child might live near a motorway or a busy road and could just start playing Frogger on the road. "Oh it will never happen", you might say. I have already shown some examples of how children will copy people, so it could eventually happen.

At the cinema and on video tapes there is an age limit for certain films, the BBC and IBA have brought in a 9pm barrier, programmes are not suitable for young children after that time. However, there is nothing stopping any child buying any game. So what should we do with this so-called dangerous software?

As with most things there is no fool-proof method to stop children buying certain pieces of software, so isn't it really up to the parents to accompany their children when buying software? Computer software doesn't have to meet any Government specifications as with cars and children's toys. Unless for some reason a computer magazine won't feature it, there is no holes barred. The only people who can really stop a piece of software being published are the software publishers.

Should the Government set up a body to review the software before it is published. This could work, or would it end up like the approval system for modems, with software being sold under the counter?

I have had my say and I don't mind whether you agree or disagree, or think I am just another person who is being an over-protective busybody, but just think next time you see a young child playing or watching somebody playing Bugblaster, what they are thinking?

Richard Brooks

This week, due to overwhelming demand, we have decided that it is about time to launch a new puzzle.

And it has also been decided that the best people to think of a new format for the puzzle would be you, the readers.

So, in essence, this week's puzzle is to think of a puzzle; which will start the week after next.

As with all other puzzles, the person who invents the most interesting format for the new puzzle (phew this is getting confusing, Ed!) will receive a prize, which for this special case will be £20.

Because this is such an important decision, we have decided to run this 'design a puzzle' competition for two weeks, so the closing date is November 7.

Send all your ideas to Puzzle Ideas, Popular Computing Weekly, Greencoat House, Francis Street, London SW1P 1DG.

We expect to see wierder and more ingenious ideas than ever!

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I didn't expect to get a 'R.I.S.K.' order ... none of us ever does. I mean, Galactic Command doesn't call for a Rapid Intercept, Seek and Kill operative unless all else has failed ... but why do I get this feeling I'm gonna be on my own this time?

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